

NOTES ON GEOGRAPHIC DISTRIBUTION

Reptilia, Chelonii, Chelidae, *Phrynops geoffroanus* Schweigger, 1812 and *Mesoclemmys vanderhaegei* (Bour, 1973): Distribution extension, new country record, and new province records in Argentina.

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The Chelonii is currently represented in Argentina by 14 species of 10 genera, belonging to six families (Richard and Waller 2000). Although several authors have addressed the study of Argentinean turtle species (e.g. Freiberg 1938; 1977; Cei 1993; Cabrera 1998; Richard 1999; Richard and Waller 2000), the knowledge about natural history and geographic distribution of some species is still fragmentary. One of these poorly known species is the freshwater turtle *Phrynops geoffroanus*. This turtle is widely distributed in South America eastern to the Andes, in the Orinoco, Amazonas, São Francisco, and Paraná rivers basins (Iverson 1992; Souza 2005). Bertoni (1925) recorded the presence of *P. geoffroanus* (as *Hydraspis geoffroyana*) at the locality of Puerto Bertoni in the High Paraná River, Paraguay, and suggested that it was likely to occur in northeastern Argentina, in the province of Misiones; subsequently Freiberg (1938; 1970; 1977) reported the presence of *P. geoffroanus* in the province of Misiones. Rhodin and Mittermeier (1983) described *Phrynops williamsi* and mentioned the presence of this species in the Misiones, within the distribution range of *P. geoffroanus*. This was accepted by other authors, who suggested that *P. geoffroanus* was present in Argentina (Pritchard and Trebbau 1984; Ernst and Barbour 1989; Iverson 1992; Fritz and Havas 2007). Nevertheless, most of recent studies about the Argentinean turtle fauna excluded *P. geoffroanus* from it, based on the absence of specimens in collections, and also because previous

reports were considered to be misidentification records of *P. williamsi* (Waller and Chebez 1987; Richard et al. 1990; Cei 1993; Cabrera 1998; Richard 1999; Richard and Waller 2000).

We document in this work the presence of *P. geoffroanus* in Argentina. Three adult specimens of this species (Figures 1 and 2) were collected with fishing lines at the Yacyretá hydroelectric dam of the Paraná River at Ituzaingó, province of Corrientes (27°28' S, 56°41' W; ca. 76 m a.s.l.) on 10 February 2006, 15 September 2006, and 17 April 2007. They were accessioned in the Diego Baldo Personal Collection, housed at Museo de La Plata (MLP DB 5283-5284, 5681).



Figure 1. Lateral view of the head of *Phrynops geoffroanus* MLP DB 5284.

NOTES ON GEOGRAPHIC DISTRIBUTION

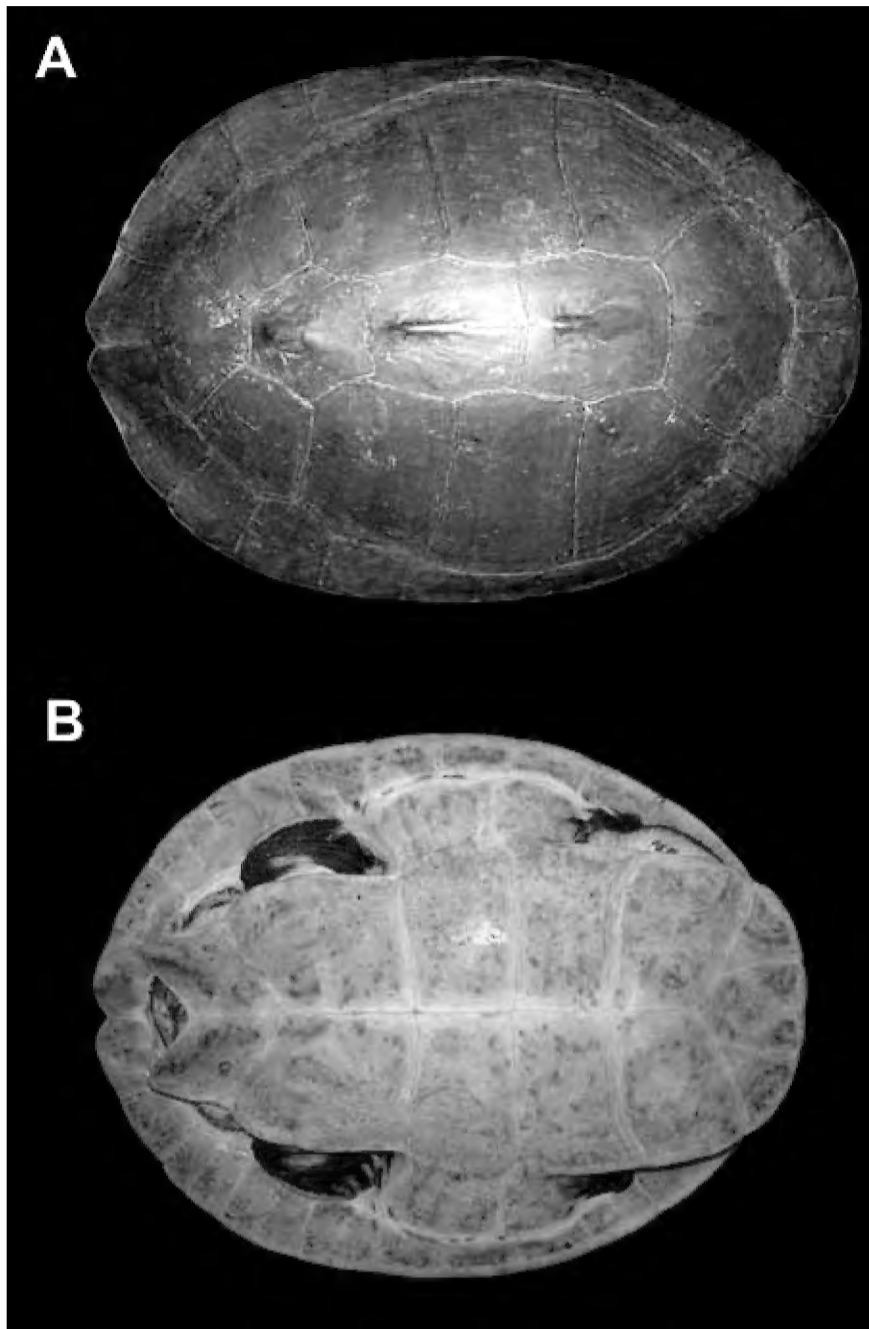


Figure 2. Adult specimen of *Phrynops Geoffroyi*: ventral (A) and dorsal (B) view MLP DB 5284.

Comparison with collection material allowed us to identify a hatchling specimen of *Phrynops Geoffroyi* (Figure 3), erroneously cited as *P. Williamsi* (Cabrera 1993; 1998). This specimen was collected from a nest with seven eggs, at Puerto Valle, departamento Ituzingó, Corrientes, on 29 January 1990, by Eduardo Franke and Alejandro Giraud, and it is deposited in the collection of Cátedra de Anatomía Comparada, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba (C-288). We compared it with two neonates of *P. Williamsi* from Parque Nacional Iguazú, Misiones (CIES 408-9, carapace length = 40 mm, with umbilical marks, of the Centro de Investigaciones Científicas y Subtropicales, Parque Nacional Iguazú).

The hatchling of *Phrynops Geoffroyi* has well defined dark spots in the plastron (Figure 3), which are smaller, diffuse and less conspicuous in the hatchlings of *P. Williamsi*, which also exhibit a radial reticulated pattern on the carapace (not observed in specimen C-288). These differences are considered diagnostic characters between *Phrynops Williamsi* and *P. Geoffroyi* (Rhodin and Mittermeier 1983).

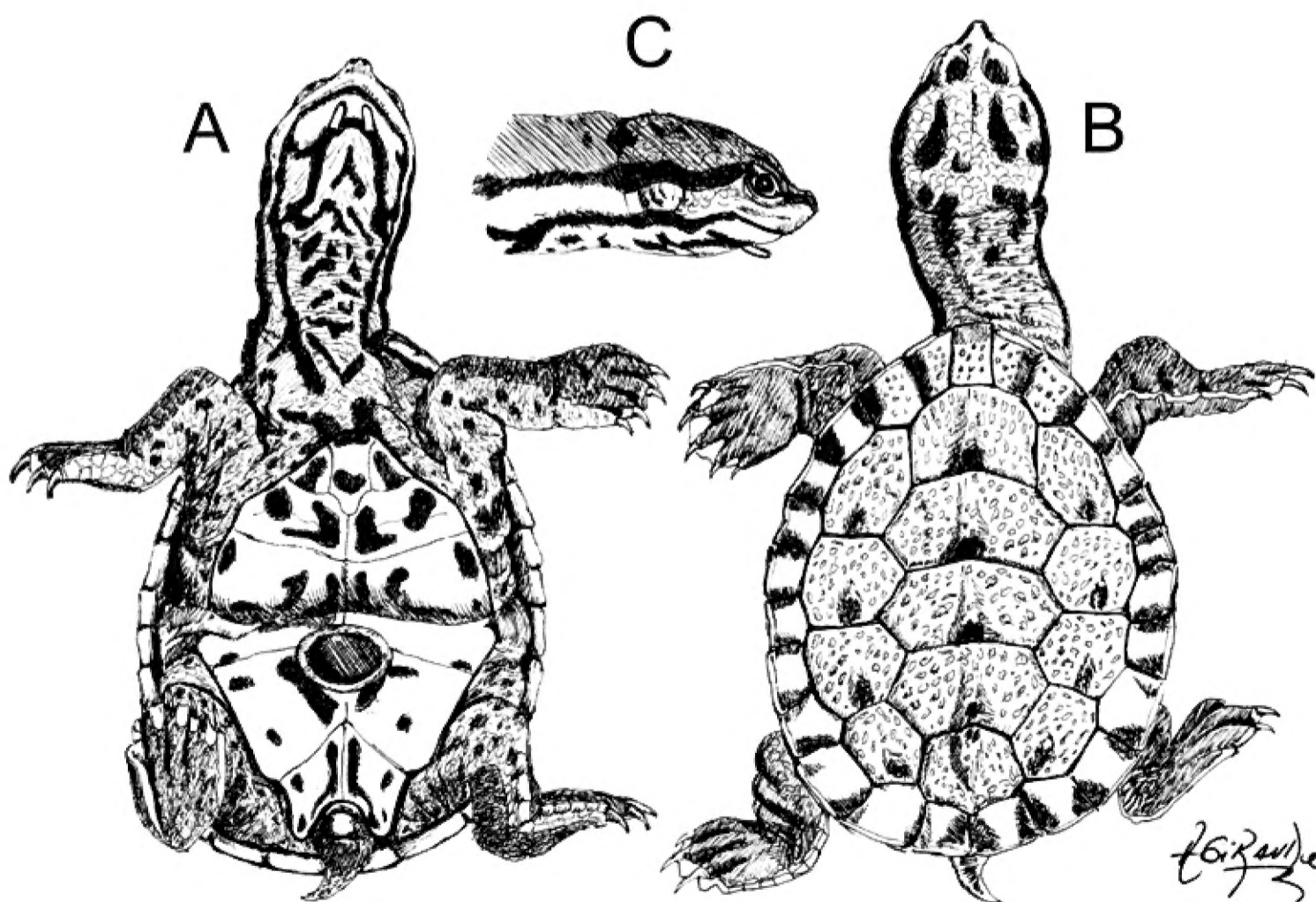


Figure 3. Juvenile specimen of *Phrynops Geoffroyi*: ventral (A) dorsal (B), and head in lateral view (C).

NOTES ON GEOGRAPHIC DISTRIBUTION

These records are located approximately 320 airline km southwest from the nearest previous record of the species, in the state of Rio Grande do Sul, Brazil (Rhodin and Mittermeier 1983). They confirm the presence and reproduction of *Phrynops geoffroanus* in Argentina and constitute the most southern records for the species from Paraná River basin (Figure 4).

Mesoclemmys vanderhaegei is a poorly known turtle species distributed along the Amazonas, Tocantins, Paraguay, Paraná and Uruguay rivers basins, associated to open areas of savannas (Souza 2005). This species in Argentina was recorded only for three localities of the northeast, in Santa Fe, Formosa, and Misiones provinces (Iverson 1992; Cabrera 1998; Baldo and Krauczuk 2000; Yanosky et al. 2000) (Figure 4). It was also reported for the province of Corrientes, but without locality data or voucher specimens

(Richard et al. 1990; Richard and Waller 2000). We recently recorded the presence of *M. vanderhaegei* in Misiones and Corrientes provinces (Figure 4). An adult female (MLP DB 5281) (Figures 5 and 6) was captured with a fishing line in an artificial pond at Chacra 65 of Paraje Carpincho, Colonia Liebig, departamento Ituzaingó, Corrientes (27°51'32" S, 55°52'35" W; ca. 134 m a.s.l.) on 20 August 2006. This is the first record of this species for the province of Corrientes with precise locality data. Other new records of *M. vanderhaegei* for the province of Misiones are an adult female (MLP DB 5282) collected at Divisa stream, at the city of Posadas, Departamento Capital (27°24' S, 55°54' W; ca. 84 m a.s.l.) on 02 November 2005, and an adult photographed in a small lagoon in the surroundings of the Posadas city airport, Departamento Capital (27°24' S, 55°58' W; ca. 114 m a.s.l.) on 26 July 2006.



Figure 4. Geographic distribution of *Mesoclemmys vanderhaegei* (solid circles = new records, open circles = historical records) and *Phrynops geoffroanus* (triangles) in Argentina.

NOTES ON GEOGRAPHIC DISTRIBUTION



Figure 5. Lateral view of the head of *Mesoclemmys vanderhaegei* (MLP DB 5281).

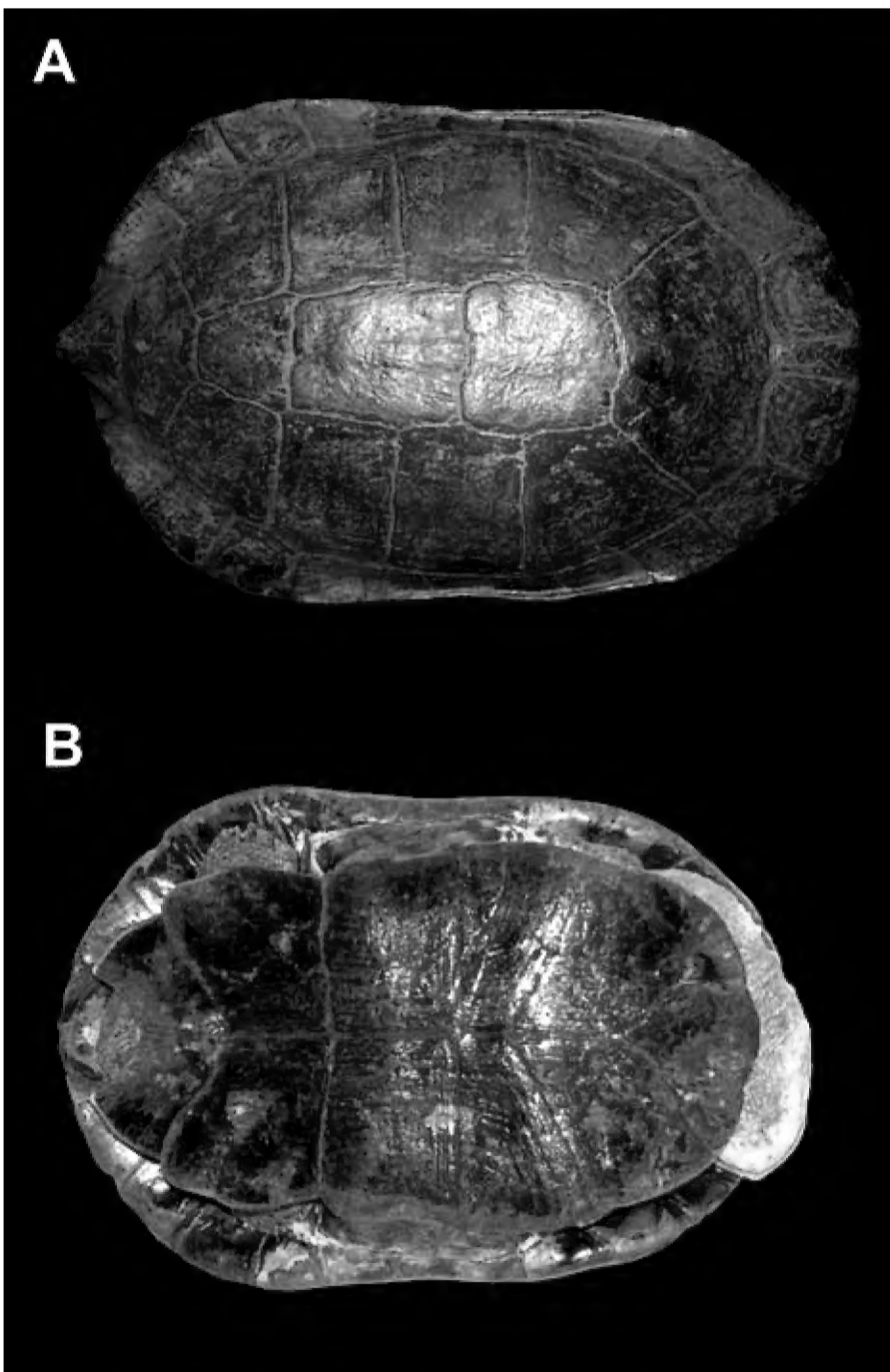


Figure 6. Adult specimen of *Mesoclemmys vanderhaegei*: ventral (A) and dorsal (B) view (MLP DB 5281).

The new localities mentioned for *M. vanderhaegei* and *P. geoffroanus* are located within the Biogeographic Unit *Distrito de los Campos* (Giraudo et al. 2003), a transitional zone between the Atlantic Forest and the Humid Chaco eco-regions (Cabrera 1976; Dinerstein et al. 1995). The landscape in this area is characterized by rush communities and savannas, which alternate with woodlands and forest patches of *Astronium balansae* in a soft hilly area (Cabrera 1976; Fontana 1993; Carnevali 1994; Giraudo et al. 2003). *Mesoclemmys vanderhaegei* occurs in varied habitats of those landscapes, such as small streams with forest cover, lagoons and artificial ponds in grasslands. *Phrynops geoffroanus* inhabits riparian environments of the Paraná River, which present numerous non sedimentary islands, abrupt coasts with narrow sandy beaches, being the coastal vegetation principally composed by submerged plants (Podostemaceae), aquatic macrophytes and grassland communities of *Panicum* spp. and *Echinochloa* spp. (Carnevali 1994).

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Literature cited

- Baldo, D. and E. R. Krauczuk. 2000. *Phrynops vanderhaegei*. Geographic distribution. Herpetological Review 31(3): 184.
- Bertoni, A. W. 1925. Nuevos quelonios paraguayos. Revista de la Sociedad Científica del Paraguay 2(1): 71.
- Cabrera, A. L. 1976. Regiones fitogeográficas argentinas. Enciclopedia Argentina de Agricultura y Jardinería 2(1): 1-85.
- Cabrera, M. R. 1993. *Phrynops williamsi*. Geographic distribution. Herpetological Review 24(2): 65-66.
- Cabrera, M. R. 1998. Las tortugas continentales de Sudamérica austral. Córdoba. Privately printed. BR Cópías. 108 p.

NOTES ON GEOGRAPHIC DISTRIBUTION

- Carnevali, R., 1994. Fitogeografía de la provincia de Corrientes. Corrientes, Gobierno de la Provincia de Corrientes. 324 p.
- Cei, J. M. 1993. Reptiles del noroeste, nordeste y este de la Argentina. Herpetofauna de las selvas subtropicales, Puna y Pampas. Monografía XIV. Torino, Museo Regionale di Scienze Naturali. 949 p.
- Dinerstein, E., D. M. Olson, D. J. Graham, A. L. Webster, S. A. Primm, M. P. Bookbinder, and G. Ledec. 1995. A Conservation Assessment of the Terrestrial Ecoregions of Latin América and Caribbean. Washington D.C., The World Bank and World Wildlife Foundation. 129 p.
- Ernst, C. H. and R. W. Barbour. 1989. Turtles of the World. Washington D.C., Smithsonian Institution Press. 313 p.
- Freiberg, M. A. 1938. Catalogo sistemático y descriptivo de las tortugas argentinas. Memórias del Museo Entre Ríos, Paraná, Zoología 9: 1-23.
- Freiberg, M. A. 1970. Validez específica de *Phrynops hilarii* (D. et B.) (Testudines, Chelidae). Revista del Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Zoología 10(13): 189-197.
- Freiberg, M. A. 1977. Reptilia. Testudines o Chelonia. Fauna de agua dulce de la República Argentina 42(1): 1-55.
- Fritz, U. and P. Havas. 2007. Checklist of Chelonians of the World. Vertebrate Zoology 57(2): 149-368.
- Fontana, J. L. 1993. Los pajonales mesófilos e higrófilos del sur de Misiones (Argentina). Composición florística, hábitat y sindinámica. Louvain. Université Catholique de Louvain, Faculté des Sciences, Unité d'Écologie et Biogéographie, Louvain-La-neuve. 170 p.
- Giraud, A. R., H. Povedano, M. J. Belgrano, E. Krauczuk, U. Pardiñas, A. Miquelarena, D. Ligier, D. Baldo, and M. Castelino. 2003. Biodiversity of the Interior Atlantic Forest of Argentina; p. 160-180 In: C. Galindo-Leal and I. G. Camara (ed.), The State of Mata Atlantica. Washington D.C., Island Press.
- Iverson, J. B. 1992. A Revised Checklist with Distribution Maps of the Turtles of the World. Richmond, Privately printed. 363 p.
- Pritchard, P. C. H. and P. Trebbau. 1984. The Turtles of Venezuela. Ithaca, Society for the study of amphibians and reptiles. 403 p.
- Richard, E. 1999. Tortugas de las regiones áridas de Argentina. Buenos Aires, Literature of Latin America. 200 p.
- Richard, E., P. E. Belmonte, and J. C. Chébez. 1990. Nombres vernáculos y distribución geográfica de las tortugas argentinas. Miscelánea, Serie Monográfica y didáctica 7: 5-30.
- Richard, E. and T. Waller. 2000. Categorización de las tortugas de Argentina; p. 35-44 In: E. O. Lavilla, E. Richard, and G. J. Scrocchi (ed.), Categorización de los Anfíbios y Reptiles de la República Argentina. Tucumán, Asociación Herpetológica Argentina.
- Rhodin, A. G. J. and R. A. Mittermeier. 1983. Description of *Phrynops williamsi*, a new species of Chelid turtle of the South American *P. geoffroanus* complex; p. 58-73 In: A. G. J. Rhodin and K. Miyata (ed.), Advances in Herpetology and Evolutionary Biology. Essays in Honor of E. E. Williams. Cambridge, Museum of Comparative Zoology.
- Souza, F. L. 2005. Geographical distribution patterns of South American side-necked turtles (Chelidae), with emphasis on Brazilian species. Revista Española de Herpetología 19: 33-46.
- Waller, T. and J. C. Chébez. 1987. Notas sobre las tortugas de la provincia de Misiones, Argentina e inclusión de *Phrynops williamsi* Rhodin & Mittermeier, 1983 (Testudines: Chelidae) en la herpetofauna argentina. Historia Natural 7(5): 53-59.
- Yanosky, A. A., J. R. Dixon, C. Mercolli, and J. Williams. 2000. Note on two specimens of *Phrynops vanderhaegei* Bour, 1973 (Testudines: Chelidae) from Formosa (Northeastern Argentina). Bulletin of the Maryland Herpetological Society 36(2): 61-64.

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